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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,680	12/12/2003	Hardy Jungermann	PO7966/LeA 35,371	1186
34947 7590 04/12/2007 LANXESS CORPORATION 111 RIDC PARK WEST DRIVE PITTSBURGH, PA 15275-1112			EXAMINER ANTHONY, JOSEPH DAVID	
			ART UNIT	PAPER NUMBER
			1714	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/12/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/734,680

Applicant(s)

JUNGERMANN ET AL.

Examiner

Joseph D. Anthony

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2007.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-15 and 20 is/are pending in the application.
 4a) Of the above claim(s) 9 and 16-19 is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-8, 10-15 and 20 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____.
 4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) ☐ Notice of Informal Patent Application
 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-8, 10-15 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Independent claim 1 is indefinite in regards to the following wording: "a) at least 26 wt.% of gadolinium as the element and/or ***from compounds and/or from alloys,***" [emphasis added].

Dependent claim 10 is indefinite because it is not understood how a physical mixture according to claim 1 can result in the formation of a compound with out a reaction of some sort.

All other claims are being rejected here because they are dependent on a rejected base claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Hall et al. U.S. Patent Number 3,751,387 or GB 1 200 614.

Hall et al teaches a composition is provided which is adapted for producing a self-supporting structure and particularly a nuclear radiation shield. The composition

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includes a mixture of 15 at least two solid materials and a solvent for one or more of these materials admixed with the mixture of solid materials. The solvent employed may be water or an organic compound, or the like. The solute may be inorganic or an organic compound and preferably sucrose. The other 20 solid material or materials are substances that have good attenuating characteristics for nuclear radiation of various types and energy levels, particularly for neutrons and gamma (or X-ray) radiation. These substances contain atoms such as hydrogen, which are effective in reducing 25 neutron energy by elastic scatter; atoms such as carbon, which are efficient in moderating higher energy neutrons to thermal neutron energy levels; atoms such as lithium, boron and gadolinium, which are good elements for the capture of thermalized neutrons; and atoms of heavy 30 metals such as lead, tungsten and depleted uranium, which have good attenuating characteristics for gamma and X- ray radiation. There is also provided a method for forming a self supporting structure which comprises admixing sucrose or other soluble material with a second solid material, a solvent for the sucrose or its substitute being employed. The ingredients are mixed to obtain - preferably a saturated solution of the solute and a product of mortar consistency. This product is shaped and cured to form a self-supporting structure. Applicant's claims are deemed to be anticipated over the compound gadolinium tungsten as set forth in Table 1.

GB teaches radiation shielding compositions comprising a polymer and a metal having atomic numbers 57 through 71. Applicant's claims are deemed to be anticipated over the compound gadolinium tungsten as set forth on page 2, lines 28-29.

6. Claims 1-8 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Haubold et al. U.S. Patent application Publication 2003/0032192 A1.

Haubold et al teach methods for the preparation of inorganic nanoparticles capable of fluorescence, wherein the nanoparticles consist of a host material that comprises at least one dopant. The synthesis of the invention in organic solvents allows to gain a considerably higher yield compared to the prior art synthesis in water. All kinds of objects can advantageously be marked and reliably authenticated by using an automated method on the basis of a characteristic emission. Further, the size distribution of the prepared nanoparticles is narrower which renders a subsequent size-selected separation process superfluous.

Applicant's claims are deemed to be anticipated over the compound $\text{Gd}_{0.9}\text{Tb}_{0.05}\text{TaO}_4$ as set forth in section [0237].

7. Claims 11-15 and 20 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Haubold et al. U.S. Patent application Publication 2003/0032192 A1 or GB 1 200 614.

Haubold et al and GB have been described above and are deemed to anticipate applicant's claimed invention because it would have been at once envisaged to add the said compounds to a polymer since such is directly suggested by the Haubold et al., see claims 39-40, 42 and 52, and the examples of GB. In the alternative, Haubold et al. and GB can individually be said to differ from applicant's claimed invention in that there is

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not a direct teaching (i.e. by way of an example) to where Haubold et al's compound $Gd_{0.9}Tb_{0.05}TaO_4$ or GB's gadolinium tungsten are actually admixed with a polymer. It would have been obvious to one having ordinary skill in the art to use the direct disclosure of Haubold's claims 39-40, 42 and 52, as strong motivation to actually admix $Gd_{0.9}Tb_{0.05}TaO_4$ with a polymer. Likewise, it would have been obvious to one having ordinary skill in the art to use the direct disclosure of GB's examples, as strong motivation to actually admix gadolinium tungsten with a polymer.

8. Claims 1-8, 10-15 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lange U.S. Patent Number 6,548,570.

Lange teaches a radiation shielding material is manufactured from an elastomer that is blended with a radiation-absorbing filler material. The filler material comprises a powder of a metal with a high atomic member, or compounds thereof. The filler material is represented by more than 80 percent weight and has a grain size distribution in the range of 20 μm to 120 μm . The filler material is mixed with a loading material in powdered form. That mixture is kneaded with the elastomer within a mixer while the temperature is maintained below 180.degree. C. The kneaded mixture is cooled and then cut into strips. The strips are passed through a strainer having a mesh width of between 5 μm and 1000 μm . The strained strips are then formed into a foil.

Lange differs from applicant's claimed invention in that there is not a direct teaching (i.e. by way of an example) to where the gadolinium compound is used in an amount of at least 26 wt. % as claimed by applicant. It would have been obvious to one

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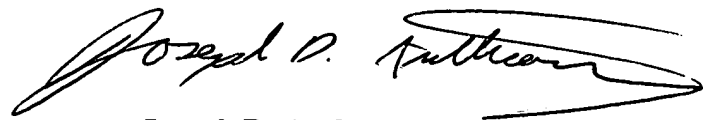
having ordinary skill in the art to use the broad disclosure of the concentration range for the metal filler material as motivation to actually use gadolinium compounds in an amount of at least 26 wt.% by weight. In any case, it does not seem that applicant has shown any superior and unobvious results that may come about when a radiation protection composition has at least 26 wt.% of gadolinium.

Prior-Art Cited But Not Applied

9. Any prior-art reference which is cited on FORM PTO-892 but not applied, is cited only to show the general state of the prior-art at the time of applicant's invention.

Examiner Information

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Joseph D. Anthony whose telephone number is (571) 272-1117. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Vasu Jagannathan, can be reached on (571) 272-1119. The centralized FAX machine number is (571) 273-8300. All other papers received by FAX will be treated as Official communications and cannot be immediately handled by the Examiner.



Joseph D. Anthony
Primary Patent Examiner
Art Unit 1714

4/7/07